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balance is at rest, as in figs. 1 and 2, the centre of the upright ridge remains free in the notch *c d*, the elastic stud *a* being a tangent to it; but when the balance vibrates 330° to the right, the balance-spring brings the elastic stud so much nearer to the centre, that the side *d* stops the ridge of the fan, as shown in fig. 3; in like manner, the side *c* stops the balance from vibrating more than 330° to the left, as shown in fig. 4, so that the total vibration is limited to 660°, and by increasing or decreasing the width of the fan *e*, the vibration may be limited to any arc between one and two circles.

Fig. 5 is a side view, the balance and balance-spring, all but its two ends, being in section, to show the ridge of the fan *e*; in the notch of the plane *c d* the balance-spring is pinned to the stud, close by the end *d*.

No. XIII.

DRAG FOR DROWNED BODIES.

The SILVER VULCAN MEDAL and FIVE GUINEAS were presented this session to Mr. S. WILLIAMS, 2, Stone-stairs, Ratcliffe, for a Drag for Drowned Bodies. The following communication has been received from the candidate, and a model of the apparatus has been placed in the Society's repository.

SIR, 2, Stone-stairs, Ratcliffe.

I HAVE sent you a drag for the purpose of raising persons that have sunk under water; the drag, you will see, must consist of thirty or forty feet of small chain or rope, capable of bearing at least one hundred weight, with hooks of four prongs, with the extremity of the prongs turned up about half an inch, and split; those hooks are to be made fast to short chains or ropes and hung on the main rope, at about two or three feet apart near the middle, and further distant towards the ends. By this method of making drags they will come very cheap, the whole cost not exceeding ten shillings; and they are, in many respects, much better than those in common use, as they will take a much greater space each haul, thereby saving time, and may be dropped under barges, timber, &c., which is very difficult with other drags. In canals also they will be found very useful, and should be made long enough to take the whole breadth of the canal, and the hooks should be placed a little closer together. A person on each side the canal could drag any space required in a short time. One on a larger scale would probably be useful to those employed in the preventive service, for raising such articles as have been sunk by smugglers, instead of the creeper-drag now in use for that purpose. I have made experiments with a bag, about two feet long, and one wide, filled with rubbish, which I seldom missed the first haul, especially under barges. The drag is intended to be used by two persons, one at each end; but if two persons are not at hand, one end of the drag must be made fast to any thing that is convenient, and the person taking as great a sweep round with the other end as the nature of the place will admit.

I am, Sir,
&c. &c. &c.
SAM. WILLIAMS.

A. Aikin, Esq.
Secretary, &c. &c.

Reference to the Engraving of Mr. S. Williams' Drag. Plate V.

Fig. 6, an extended view of the drag to a scale of one-eighth of an inch to a foot. The central grapples are nearer together, and also nearer to the chain, than the end ones, they hanging with two links, while the end ones have twelve links.

Fig. 7, a perspective view of one of the grapples, one quarter of the real size.

Fig. 8, a top view of a board, three feet long, having a square hole *g g* sufficiently large to let the grapples come through, and a long slit *h h* for them to hang in.

Fig. 9, a side view of the same, with the grapples and chain hanging in their place; the long folded ropes *i i* are secured to each end of the chain; *j j* a bar of wood to lay over the grapples; it is then tied down, with the chains wrapped round it, and thus renders the grapples portable.